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ABSTRACT

A study examined the stability of career interests of adolescents using the Strong-Campbell Interest Inventory (SCII). Participants were 271 freshmen from a rural Midwestern state who took the SCII two times, 3 years apart. Based on this sample, comparisons were made on occupational themes and basic interests of the SCII. Results revealed that these adolescents were relatively stable in their inventoried career interests in high school, supporting previous research. Significant differences in mean scores on the SCII were found for time period, gender, and parent occupation. The study supports the usefulness of the SCII measure with high school students. It also suggests that variables of age, gender, and parent socioeconomic status must be considered when interpreting the stability of occupational interests of students. The study shows the importance of not only assisting young adolescents with career exploration but also of involving family members in discussions of their career interests and options, especially for families in rural areas where exposure to careers may be more limited. Further research should investigate whether the examination of a broader set of social and contextual variables may give greater insight as to how and when adolescents clarify and eventually commit to their vocational choices. (Contains 18 references.) (KC)

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Stability of Vocational Interests Among High School Students

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Abstract

The purpose of this study was to examine stability of career interests of adolescents using the Strong-Campbell Interest Inventory (SCII). High school students from a rural Midwestern state participated in the study over a three year period. Two-hundred-seventy-one freshmen took the SCII two times, three years apart. Based on this sample, comparisons were made on Occupational Themes and Basic Interests of the SCII. Results revealed that these adolescents were relatively stable in their inventoried career interests within high school. During this period, significant differences in mean scores on the SCII were found for time period, gender, and parent occupation. These findings are discussed in relation to previous research and to Holland's theory. Implications of these findings are also addressed.

Stability of Vocational Interests Among High School Students

Holland's (1973, 1985) theory of career choice has guided much of the research on career development for several decades. Holland theorized that career choices represent an extension of one's personality and that the adequacy of occupational choices is largely a function of personal factors (e.g., personality traits, self knowledge, occupational knowledge) and environmental factors (e.g., family, school). Career choices are made as individuals seek the types of environment that matches, or is congruent with, their personality type. Holland's theory includes three related constructs-- congruence, differentiation and consistency-- to explain the interaction of types within an individual, and between an individual and her or his environment. The construct of consistency or stability in expression of vocational interest themes and basic interests as measured by the Strong-Campbell Interest Inventory (Hansen & Campbell, 1985) was the primary focus of this study.

The Strong-Campbell Interest Inventory (SCII) has had a reputation for its capacity to identify career interests for almost seventy years. Lunneborg (1977) provided evidence of concurrent and predictive validity of the SCII and its capacity to predict occupational membership in the present and in the future. Using Holland's (1973, 1985) career typology, the SCII utilizes this theoretical schema to predict the occupational interests of respondents. Naylor, Care and Mount (1986) reported good concurrent validity between General Occupational Themes of the SCII and Holland's Occupational Themes.

The examination of stability and consistency of career interests continues to be of interest to researchers and practitioners alike (Campbell, 1966; Hansen, 1984; Hansen & Stocco, 1980; Lunneborg, 1977; Prawat, Jones, & Hampton, 1979; Swanson & Hansen, 1988). Of particular interest is the stability of career interests among high school students who experience a variety of career options as part of their education and continuing maturation. Hansen (1984) observed that studies of career interests have sometimes been confused with studies of test-retest reliability of interest inventories. This occurs because stability of interests are obtained when retesting of subjects extends beyond six months, usually years later. Hansen and Stocco (1980) found the SCII to be a useful measure of stability when testing adolescents and young adults at two time periods, three years apart. For the high school sample, stability coefficients were reported by Hanson and Stocco as -.21 to .92 for for basic interest scales and -.31 to .96 for occupational themes. The young adult sample yielded coefficients of -.28 to .96 for basic interests and .17 to .97 for occupational themes. Similarly, Swanson and Hansen (1988) found that college students were highly stable in their career interests over 12 years and that these interests were significantly related to self ratings of stability.

Despite some evidence from past studies on stability of career interests of adolescents and young adults, there remains a need to substantiate these earlier findings and further validate Holland's theory and measurement of career interests. Aside from predicting future career choices, understanding more about career preferences of younger adolescents can assist educators and counselors in designing

programs and instructional strategies that better meet the needs of this age group. For example, knowing developmental patterns of career preferences of male and female adolescents can help professionals expose youth to a broader range of career options. This continues to be an important issue because of inconsistent evidence with regard to the stability of sex differences in vocational interests. Diamond (1975) argued that because more people seem to see traditional sex roles as arbitrary, sex differences in career interests may be diminishing in our society. In contrast, Hansen (1984) concluded that despite heightened consciousness, sex differences in vocational differences have remained stable in recent years. .

In addition to the relevance of gender in emerging career preferences, Holland suggested that families, their work patterns and social position, have a profound impact on their children's career interests. Holland (1962) reported that fathers occupation was significantly related to their son's career interests. Subsequent findings by others (e.g.,Bratcher, 1982; Mortimer, 1976) have supported relationships between social class and social influence and career interests.

The magnitude and stability of influence of individual and sociocultural factors on adolescent career interests continues to be unclear in the literature.Consequently, the purpose of this study was to examine the stability of career interests of high school students, at two points in time. In keeping with Holland's theory, that both personal and environmental factors influence one's career interests over time, the relationships between career interests and age, gender and parent socio-economic status also were examined.

Method

Participants

Participants for this study included 271 freshman (48% males and 52% females) high school students who had been a part of a larger pool of high school participants randomly selected from schools in a midwestern state. This subsample of students was drawn from a larger cross-sectional study of over 1350 high school students. The freshman were those students who participated in the study at two points in time, three years apart. The freshman sample represented 71% of the original sample of freshman (n= 382). During initial testing, the freshman group ranged in age from 14 to 15 years years. Participants were predominantly Caucasian from two-parent families (88%), averaging 4.5 persons per family. Adolescents reported that their families had resided in their homes on an average of nine years. Parental occupations were categorized into three major categories--professional, unskilled, and skilled--based on Hollingshead's Four Factor Index of Social Position (Hollingshead, 1975). All mothers and fathers had completed high school and forty-eight percent had attended or completed college.

To determine if scores from those students who were used in the longitudinal sample of this study were similar to those who were not included, t-tests comparing mean scores between groups were conducted. No significant differences were found between groups across scales suggesting that those students who participated in the longitudinal groups were essentially the same as those who had not participated.

Measures

Participants were administered the Strong-Campbell Interest Inventory (Hansen & Campbell, 1985). The SCII includes identical measures of Holland's RIASEC Themes and 23 Basic Interest Scales thought to reflect components of the former, administrative indices, and two special scales. RIASEC is an acronym for Holland's hexagonal system of six vocational-interest themes: Realistic (**R**: interests in working with things and gadgets, working in the outdoors, need for structure); Investigative (**I**: scientific interests especially mathematics and the physical sciences, independent work); Artistic (**A**: interests in creative expression in writing and the arts, need for little structure); Social (**S**: people interests drawn toward the helping professions); Enterprising (**E**: preferring leadership roles aimed at achieving economic objectives); and Conventional (**C**: preferring well structured environments and chains of command, such as those found in office practices, tend to be followers rather than leaders).

The 23 Basic Interest Scales (preceded by the letter of their most closely associated RIASEC theme) follow: R (agriculture, nature, adventure, military, and mechanical activities, I (science, mathematics, medical science, and medical service), A (music/dramatics, art, and writing), S (teaching, social services, athletics domestic arts, and religion), E (public speaking, law/politics, merchandising, sales, and business management, and C (office practices).

In addition to the above measure, demographic information (e.g., parents' occupation and education, family composition) was collected from participants.

Procedure

Measures were distributed to all participating adolescents in randomly selected high schools in the state during the spring semester. Trained personnel in each school administered the SCII and demographic questions according to instructions provided, and then returned the completed measures to the investigators. During the first year (Time 1) the measures were given to freshman level high school students. Three years later, the measures were administered again to the same group of students (Time 2).

Results

Test-retest correlation coefficients are presented in Table 1. The range of correlation coefficients for high school students were .48 to .70 (Themes) and .50 to .77 (Basic Interests). Correlations were highest for the Realistic, Artistic and Social Themes and lowest for the Enterprising, Investigative and Conventional Themes. Basic Interest scales of religious activities, public speaking, law and politics, business management and office practices were least stable for this sample. Generally, the test-retest coefficients were good for this sample of high school students.

Insert Table 1 about here

Analysis of time and gender differences

The means and standard deviations for selected scales of the SCII by time and gender are presented in Table 2. Significant time differences ($p<.01$) for the high school group were found for all Themes and Basic Interests with the exception of the Realistic Theme and corresponding Basic Interests of agriculture, adventure, military activities, and mechanical.

Insert Table 2 about here

The most dramatic gender differences were found for the Realistic, Social and Conventional Themes. Males had higher mean scores for the Realistic Theme whereas females had higher scores for the Social and Conventional Themes. Significant gender differences were found to be stable for the participants across Realistic, Artistic, Social, and Conventional Themes. Similar stability of gender differences were found for 17 of 23 Basic Interest scales. Apparently, with increasing age, career interests of individuals are less influenced by gender and more influenced by personal preferences.

Analysis of parent occupation

Data were compared in relation to parent occupation for Time 1 and Time 2. Levels of parent occupation were based on the Hollingshead Four Factor Index of Social Position (Hollingshead, 1975) of occupations and were reduced for analysis to three categories of professional, skilled and unskilled occupations. Mean scores on the SCII were analyzed according to this classification by time (See table 3).

Insert Table 3 about here

Significant differences were found for parent occupation across scales. Stable parent occupation differences were found for Investigative, Artistic, Social, and Conventional Occupational Themes. Stable differences in Basic Interests were found for agriculture, math, music, art, writing, teaching, public speaking, merchandising, and business management.

Participants from professional or skilled families tended to show greater interests in all Occupational Themes except the Realistic Theme. Participants from unskilled families showed higher Basic Interests in agriculture, nature, adventure, military activities, and mechanical.

Discussion

The results of this study support the stability of the Occupational Theme scores and the subscales of the Strong-Campbell Interest Inventory (SCII) found in previous research (Campbell, 1966; Hansen, 1984; Hansen & Stocco,1980). As with previous research (e.g., Hansen & Stocco, 1980), the present study revealed that scores on the Occupational Themes and Basic Interests are relatively consistent for high school students. In addition, the high median correlation coefficients indicate that participants

were generally consistent in their career interests over a three year period. We do not know from these data whether this consistency would be evident for longer periods and whether individual differences would also be stable.

According to Holland (1973; 1985), the sociocultural context is of critical importance in understanding career development and the results of the present study are consistent with this perspective. In addition to age, variables of gender and parent occupation were found to relate to career interests of adolescent participants.

Gender differences in career interests of adolescents or the lack of them, seemed to remain stable over a three year period which corresponds to earlier findings (Broday, 1990a,b; Hansen, 1984). Examination of these data indicate that females scored significantly higher than males on the Social, Artistic , and Conventional Themes. Although there may be several reasons for these findings, it seems that in our culture differential socialization provides an important and useful explanation. In western culture, females traditionally have been reinforced for more social, artistic and conventional activities and behaviors. This same explanation may also apply to the males in this study who scored higher on the Realistic Occupational Theme. The socialization process for male adolescents often encourages them to be more introverted and to identify with adult males, certainly more represented in the basic occupations of the Realistic Theme (e.g., agricultural, military).

Parent occupation also seemed to play an influential role in the inventoried occupational interests of students. Again, this finding is consistent with Holland's theory and associated research (Hansen, 1984; Holland,1962). When examining the data, several interesting differences emerged. For example, students with parents in unskilled occupations scored higher on the Realistic Theme, whereas students with parents in professional and skilled occupations scored higher on the Artistic, Social, and Conventional Themes. With age, participants from professional families expressed that they liked more occupations than participants with unskilled parents. Again, it seems that participants with professional and skilled parents are more likely than participants with unskilled parents to be encouraged to remain open and explore their occupational interests . This finding certainly magnifies the importance of family and community environments in explaining the emergence of career interests of high school students. The rural nature of this sample also suggests that adolescents who are exposed to fewer potential occupational opportunities may be influenced more by environmental factors including family socio-economic status and existing community opportunities, and possible experiences.

Implications

In sum, the findings of this study support the usefulness of the SCII measure with high school students. It suggests further that certain variables like age, gender and parent socio-economic status must be considered when interpreting the stability of occupational interests of students. That gender differences in career interests are present should be a reminder to counselors that adolescents need impetus to explore beyond traditional gender typed occupations. Most guidance counselors are well aware of the importance of normative developmental changes during

adolescence. However, the findings of the present study suggest that there are more variables to consider when evaluating an adolescent's career interests. Professionals working with adolescents can interpret career interests from several contexts considering not only the individual characteristics but sociocultural considerations as well when interpreting results and formulating recommendations for career exploration.

This study suggests the importance of not only assisting young adolescents with career exploration but involving parents and other family members in discussions of their career interests and options. With the intervention of a teacher or guidance counselor, the adolescent can explore options in addition to those he/she may have been exposed to in the home. Parents can be made aware of the influence they have concerning the career interests of their children. In addition, professionals and parents can consult together in developing plans to orient the student to a variety of career options. This seems especially important for those families who reside in rural areas because exposure to and experience with a wide variety of careers may be more limited. The findings also suggest that school-age children and preadolescents need to be encouraged to examine different options beyond their current range of social experience. As the SCII is found to be stable as early as ninth grade, students need to be encouraged to explore outside of the home, even before high school.

It has been suggested here that, although career interests of adolescents are becoming more stable, we need to remind ourselves that children's and adolescent's self knowledge and occupational awareness continues to be strongly influenced by sociocultural experiences. Future research should investigate whether the examination of a broader set of social and contextual variables may give us greater insight as to how and when adolescents clarify and eventually commit to their vocational choices.

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Table 1. Test-retest correlation coefficients for SCII scales.

Scales:	High School Students(n=271)
Themes:	
Realistic	.704
Investigative	.564
Artistic	.608
Social	.646
Enterprising	.483
Conventional	.567
Basic Interests:	
Agriculture	.707
Nature	.586
Adventure	.704
Milatary Act.	.500
Mechanical Act.	.689
Science	.594
Math	.608
Medical Sci.	.580
Medical Ser.	.557
Music/Dramatics	.616
Art	.585
Writing	.658
Teaching	.571
Social Ser.	.643
Atheletics	.659
Domestic Arts	.690
Religious Act.	.773
Public Speaking	.728
Law/Politics	.715
Merchandising	.548
Sales	.543
Business Man.	.579
Office Prac.	.747

Table 2: Means and standard deviations across SCII scales by time and gender.

	High School Students (n = 271)			
	Time #1		Time	
Scales	M	F	M	F
Themes:				
Realistic	50.94 (9.24)	37.40** (6.85)	51.65 (9.73)	41.63** (8.37)
Investigative	42.41 (9.634)	40.05 (8.68)	40.27 (10.88)	37.38** (9.28)
Artistic	35.76 (7.96)	42.25** (10.09)	38.75 (10.27)	41.84** (10.80)
Social	35.17 (9.13)	44.72** (9.96)	35.81 (8.75)	40.10** (10.32)
Enterprising	41.85 (9.98)	44.46* (9.09)	45.96 (10.94)	46.33 (10.38)
Conventional	41.39 (10.08)	47.84** (10.22)	44.77 (10.71)	50.75** (10.75)
Basic Interests:				
Agricultural	51.03 (9.92)	44.25** (8.17)	50.40 (10.43)	44.69** (8.62)
Nature	38.90 (7.85)	40.89* (7.87)	41.59 (8.68)	42.51 (10.03)
Adventure	57.38 (9.49)	47.85** (9.51)	57.85 (9.93)	46.53** (9.82)
Military Act.	54.84 (12.03)	46.84** (9.31)	51.27 (11.31)	45.51** (7.42)
Mechanical	52.22 (8.76)	39.81** (6.36)	53.55 (9.07)	39.12** (7.31)
Science	45.23 (9.47)	40.43** (6.93)	46.42 (9.82)	39.16** (7.94)
Math	45.20 (9.15)	46.41 (8.52)	47.23 (9.86)	45.69** (9.61)
Medical Science	40.65 (9.42)	42.64 (10.14)	41.63 (9.56)	40.41 (9.72)
Medical Services	43.46 (7.34)	49.54** (10.46)	45.42 (8.80)	48.26** (11.20)
Music/Drama	36.14 (7.03)	45.33** (9.47)	40.58 (9.36)	45.15** (10.11)
Art	37.98 (8.96)	45.03** (9.86)	37.66 (9.66)	35.81** (8.75)
Writing	33.29 (6.78)	39.62** (10.05)	37.67 (9.67)	35.90** (8.06)
Teaching	38.83 (9.39)	45.66** (9.96)	40.65 (10.47)	47.02** (10.32)
Social Service	36.85 (7.13)	48.33** (10.74)	40.11 (8.70)	50.10** (10.62)
Athletics	53.22 (9.83)	51.07* (8.26)	53.44 (10.77)	48.72** (8.29)
Domestic Arts	38.66 (7.91)	54.33** (10.86)	41.75 (8.71)	53.13** (9.45)
Religious Activities	39.25 (6.89)	43.50** (8.81)	40.24 (7.87)	44.04** (9.23)
Public Speaking	37.63 (8.07)	39.57* (8.60)	40.58 (9.06)	40.46 (9.26)
Law/Pol.	40.61 (8.77)	40.67 (8.22)	42.22 (9.51)	41.66 (8.78)
Merchandising	39.61 (8.80)	48.31** (8.73)	43.10 (10.22)	48.50** (9.54)
Sales	49.26 (8.39)	50.15 (8.75)	50.92 (9.87)	50.85 (9.80)
Business Mgmt.	39.05 (9.53)	42.42** (8.82)	42.36 (10.33)	45.88** (10.20)
Office Practices	44.40 (6.99)	56.54** (10.35)	46.28 (8.92)	59.20** (12.38)

Note: Gender differences: *p<.05; **p<.01

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Table 3: Means and standard deviations for SCII scale by time and parent occupation.

Scales:	Time 1 (n = 271)			p	Time 2 (n = 271)			p
Themes:	P	S	US		P	S	US	
Realistic	45.60 (9.37)	44.53 (11.02)	49.06 (10.22)	–	45.23 (11.18)	45.26 (9.89)	50.84 (10.43)	*
Invest.	40.29 (8.01)	39.01 (10.97)	34.73 (9.78)	*	41.02 (10.13)	39.74 (10.45)	35.59 (9.57)	*
Artistic	40.36 (8.77)	38.28 (9.77)	38.94 (10.02)	**	39.00 (9.69)	42.24 (11.22)	35.28 (8.30)	**
Social	41.95 (10.13)	39.2 (9.70)	34.66 (10.62)	*	43.67 (11.29)	43.03 (10.67)	37.21 (9.01)	**
Enter.	44.92 (10.11)	42.54 (10.24)	40.15 (8.82)	–	47.14 (9.93)	46.70 (10.98)	42.59 (10.04)	–
Conv.	46.56 (10.17)	42.90 (10.32)	39.24 (10.12)	**	50.55 (11.74)	47.31 (10.19)	41.44 (10.22)	**
Basic Interests:								
Ag.	49.32 (8.16)	47.79 (8.62)	53.54 (8.89)	**	47.27 (8.73)	46.71 (9.94)	54.91 (11.68)	**
Nat.	38.33 (8.66)	39.19 (8.21)	39.93 (7.82)	–	39.90 (8.76)	40.94 (9.69)	42.00 (8.77)	–
Adv.	53.07 (10.57)	54.51 (10.04)	54.49 (11.88)	–	53.08 (11.32)	53.21 (11.75)	53.60 (10.40)	–
MilAc.	49.78 (11.56)	50.16 (11.46)	52.00 (12.44)	–	48.42 (9.92)	48.76 (9.84)	50.50 (12.75)	–
Mech.	44.49 (9.26)	47.24 (10.72)	49.17 (10.52)	–	46.96 (11.82)	46.82 (10.34)	51.50 (11.03)	–
Sci.	44.31 (7.83)	43.81 (9.82)	42.86 (8.62)	–	42.67 (9.31)	43.93 (9.63)	42.40 (8.90)	–
Math	47.88 (9.64)	46.28 (8.40)	39.70 (8.64)	**	49.11 (10.01)	46.35 (9.54)	42.68 (8.58)	**
MedSci.	44.46 (9.47)	40.49 (10.80)	37.46 (7.76)	**	42.60 (10.31)	40.92 (9.27)	39.72 (9.20)	–
MedSer	48.41 (9.05)	47.03 (9.20)	44.53 (7.42)	–	47.10 (10.82)	46.89 (9.69)	45.53 (10.35)	–
Music	39.66 (9.19)	40.73 (9.43)	35.14 (10.14)	*	41.73 (9.46)	44.29 (10.32)	38.25 (8.53)	**
Art	40.10 (9.48)	41.17 (9.77)	37.42 (10.00)	*	41.66 (10.18)	45.21 (11.34)	38.12 (8.74)	**
Writing	37.76 (8.81)	36.66 (8.89)	32.42 (9.67)	*	36.84 (8.32)	39.30 (10.80)	33.81 (8.72)	**
Teach	42.63 (10.05)	40.62 (10.73)	34.73 (10.29)	**	44.75 (10.79)	44.08 (11.22)	34.78 (7.84)	*
SocSer.	43.50 (10.54)	41.25 (10.73)	39.30 (10.23)	–	45.22 (10.60)	45.28 (11.22)	39.72 (7.73)	*
Athlet.	53.30 (9.60)	52.55 (8.98)	49.59 (9.49)	–	53.12 (9.39)	51.07 (10.08)	48.71 (10.65)	–
DomArt.	46.50 (11.44)	46.78 (12.37)	41.63 (12.36)	–	46.41 (10.79)	48.01 (10.31)	42.71 (10.98)	*
RelAc.	42.09 (7.64)	40.27 (7.56)	41.10 (8.21)	–	41.73 (8.46)	42.96 (9.06)	37.87 (5.25)	**
PubSpk.	40.50 (8.74)	37.70 (8.40)	34.17 (7.76)	*	39.95 (9.29)	37.84 (9.05)	34.40 (8.64)	*
Law/Pol.	40.87 (8.61)	39.70 (8.49)	37.93 (7.77)	–	42.98 (9.57)	42.35 (9.27)	38.43 (7.17)	–
Merch.	43.43 (9.68)	42.57 (9.84)	38.42 (7.89)	*	46.68 (9.50)	46.15 (10.57)	40.38 (9.14)	**
Sales	50.74 (9.25)	50.01 (9.30)	49.49 (7.32)	–	51.41 (9.89)	51.02 (9.88)	49.59 (9.48)	–
BusM.	41.67 (9.46)	40.63 (9.98)	36.91 (8.08)	*	45.65 (10.32)	44.36 (10.43)	38.68 (8.70)	**
OffPrac.	50.31 (9.77)	49.40 (10.84)	47.91 (10.87)	–	51.41 (13.49)	50.82 (11.35)	46.31 (10.51)	**

Note:* p<.05; **p<.01

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